Work Orde Thursday, May 2							· •				Page 1
Revision ID:	D205-596-10			Accept					·		
•	5/20/2010	Start Qty: 1.00 Req'd Qty: 1.00			Cust Item Customer						
Approvals:	Process Pla QC:	n:	Date: 10-5-2	O Tooling: SPC (Y/N):	1	Date:		I			
Sequence ID/ Work Center ID)	Operation Description	**	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Rejec Qty	t Reject Numbe	Insp. r Stamp
Draw Nbr	Revi	ision Nbr						2 -3	~~	Tumbe	· Stamp
D205-596	Rev	В									
DC		DOCUMENT CONTRO Memo Photocopy	OL D205-594 bluefile & type la	0.00 0.00 thels per PPP D205-596.	105 CHG002	`	1	19	for	BG 1	10/06/07
			zace es roudine a type to	1000 per 111 10200 570	-103 CHG002	s is look	ey				
		BENDING MACHINE	- CROSSTUBES	0.00					6		/O
CNC Bend 2 CNC Alpha 160 Bend	l er	Memo Bend as pe	er Dwg D2889 using CNC be	0.00						_ M.B	_ 10-05

130

Quality Control

QC15- Crosstube Dimensional Check

Memo

Dart /	Aerospa	ce Ltd
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W/O:			W	ORK ORDER CHANG	ES			•
DATE	STEP	PRO	CEDURE CH	ANGE	Ву	Date Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
Part No		PAR #:	Fault Cat	egory:	_ NCR: Yes	No DQA:	Date: _	
	R	esolution:	Dispositi	on:	_ QA: N/C Cld	osed:	Date: _	
NCR:		\	WORK ORE	DER NON-CONFORMA	NCE (NCR)		
DATE	STEP	Description of NC Section A	Initial Chief Eng	Corrective Action Section Action Description Chief Eng	on B Sign & Date	Verification Section C	Approval Chief Eng	Approval QC Inspector
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Thursday, May 20, 2010 9:06:36 AM

Page 2

Item ID:

D205-596-105

Accept



Setup Start

Stop



Revision ID:

Item Name: Crosstube Fwd Extended

5/20/2010

Start Qty: 1.00

Required Date: 6/7/2010 Req'd Qty: 1.00

Cust Item ID:

Customer:

Reference:

Start Date:

Α	pprovals:	

Process Plan: ___

Date:

Tooling:

0.00

Date:

Run Start



Date:

SPC (Y/N):

Date:

Stop

Sequence ID/ **Work Center ID**

140

Crosstubes

Crosstubes

Operation Description

Crosstubes

Set Up/ **Run Hours**

Draw Number

Draw Rev.

Plan Code

Accept Qty

Reject Qty

Reject Insp. Number Stamp

~ manh cut line @ 32.600,000

1-Cut as per Dwg D205-596-105 \\ \mathcal{VB} \\ \mathcal{VO} - \operatorus 7 - 2 \\ \mathcal{T} \\ \mathcal{T}

2-Deburr & Inspect for surface damage. Polish cut surface. Scribe part # and

batch # on one end of tube.

-ANM10-5:31

150

160

QC15- Crosstube Dimensional Check

0.00

Sidos/31

Quality Control

Crosstubes Chemical Conversion

Memo

0.00

HandFXtube

Memo

0.00

Hand Finishing Crosstubes

Dart	Aeros	pace	Ltd
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	-								•
W/O:			W	ORK ORDER CHANGE	S	<u> </u>			•
DATE	STEP	PR	OCEDURE CH	ANGE	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
Part No		PAR #:							
	R	esolution:						Date: _	
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DATE	STEP	Description of NC	In it at	Corrective Action Section		Verific	ation	Approval	Approval
***		Section A	Initial Chief Eng	Action Description Chief Eng	Sign & Date		on C	Chief Eng	QC Inspector
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1												
Work Ord Thursday, May												Page
Item ID: Revision ID:	D205-596-1	05		Accept					Setup Si	tart		
Item Name:	Crosstube Fw	d Extended							S	top		
Start Date: Required Date: Reference:	5/20/2010 : 6/7/2010	Start Qty: 1.00 Req'd Qty: 1.00			Cust Item I Customer:	D:						
Approvals:	Process Pla	an:	Date:	Tooling:	. D:	ate:	_	F	Run St	tart		
	QC:		Date:		- -	ate:			Si	top		
Sequence ID/ Work Center II	D	Operation Description		Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty		eject umber	Insp. Stamp
		SprayPaint		0.00				M	10		<i>5</i> 6	a) (
SprayPaint Spray Painting		Memo 1-Prime insid	e and outside with Imn	0.00 nron per QSI 005 4.2	1 *			·			0.	
180		QC14- Inspect Spray Pain	t	0.00		•						·
QC Quality Control		Memo		0.00				25	<u>(</u> 0	<u>· დ</u>	16 -	02 (
190				0.00				Λ				
Crosstubes		Crosstubes Memo		0.00				ml	_10		٥6	02 (

1- Lightly scuff the bonded area using a 320 grit sand paper and clean the area

with 41058 wash 'n' wipe
2- Apply magnobond 6398 as per dwg D205-596-105 Magnobond 6398
Batch: 114021 EXP: 01/8011

3-Inst Torque: M 10.06.03 ()

Crosstubes

Page 3

W/O:			WC	ORK ORDER CHANG	GES					6
DATE	STEP	PR	OCEDURE CHA	NGE		Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
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	Res	solution:	Dispositio	n:	QA:	N/C Clo	sed:		Date:	
NCR:			WORK ORD	ER NON-CONFORM	ANCE	(NCR)			
DATE	STEP	Description of NC	Corrective Action Section B			V.		ation	Approval	Approval
<u> </u>		Section A	Initial Chief Eng	Action Description Chief Eng		Sign & Date	Section C		Chief Eng	QC Inspector
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Work Order ID 58932

Thursday, May 20, 2010 9:06:36 AM



Page 4

Item ID:

D205-596-105

Accept



Setup Start



Revision ID:

Item Name:

Crosstube Fwd Extended

Start Date:

5/20/2010

Start Oty: 1.00

Required Date: 6/7/2010

Req'd Oty: 1.00



Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Date:

Rev.

Run

Start

Stop

Reject

Stop



Number Stamp

Date:

SPC (Y/N):

Set Up/

Run Hours

Draw

Number

Draw Plan

Code

Accept Qty

Reject Otv

Insp.

Work Center ID

200

Sequence ID/

Quality Control

Operation Description

QC5- Inspect part completeness to step on W/O

0.00

0.00

210

Packaging

Packaging

Packaging

Memo

Memo

0.00

0.00

Identify and pack for shipping as per PPP D205-596-105

Location:

PPP Rev:

220

Quality Control

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

10-6-7

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W/O:			WC	RK ORDER CHANGES	+			/···	* * * * * * * * * * * * * * * * * * * *
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Part No	:	PAR #:	Fault Cate	gory: N	ICR: Yes	No DQ	4 :	Date:	
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			1.						

Picklist Print

Thursday, May 20, 2010 9:06:40 AM

Work Order ID: 58932

Parent Item:

D205-596-105

Parent Item Name: Crosstube Fwd Extended

Comments:

IPP Rev:D□05.03.21□Added bending procedure□KJ/JLM IPP Rev:E 08-01-10 ECN 1075



Start Date: 5/20/2010

Start Qty: 1.00

Required Date: 6/7/2010

Required Qty: 1.00

IPP Rev F 08.04	4.28 Added bend	ling & 1	mat'l EC verified by:	DD						
Component Item ID/ Replacement D6005-180	t Mfg/ Manufactured	Bin No	Primary Last	Route	Unit of Each	Qty on 9.0000	Qty per Kit	Qty	Date	Status
Crosstube Material				٠				Mg	10-05-25	
			Location	Loc (Qt <u>v</u>	Loc Code				
			LG 39734		9 9		_	W	-	
D2893-1	Manufactured	No		190	Each	51.0000	2		-	
			>							
2.75 Support			Location	Loc (<u>Oty</u>	Loc Code			M 10-00	602
			LG		51		_		. ////	
			53340		9 2		-		-	
			53774		20		_		-	
			56354		20			-	•	
MS21920-25	Purchased	No		190	Each	69.0000	4		-	

Clamp(per MIL-DTL-8783C)

Location	Loc Qty	Loc Code
ST451	69	
113281	25	
113282	18	
113744	1	
114141	25	

M 10.06.0Z

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Part No	:	PAR #:	Fault Cate	gory:	NCR: Yes	No DQA	\ :	Date:	
		solution:							
NCR:			WORK ORDE	R NON-CONFORM	ANCE (NCR)	· •		
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Picklist Print

Thursday, May 20, 2010 9:06:40 AM

Page 2

Work Order ID: 58932

Parent Item:

D205-596-105

Parent Item Name:

Crosstube Fwd Extended

Comments:

IPP Rev:D□05.03.21□Added bending procedure□KJ/JLM

IPP Rev:E 08-01-10 IPP Rev F 08.04.28

ECN 1075 Added bending & mat'l

EC verified by: DD

Start Date: 5/20/2010

Required Date: 6/7/2010

Start Qty: 1.00

Required Oty: 1.00

Date

Component Item ID/

Replacement Mfg/ D3595-063-450

Manufactured

Primary Bin No

Last

Route 190

Unit of Each

Qty on 58.5790

Qty per Kit Qty

Status

RUBBER CUSHION

Location

LG

53775 58161 58.57897368 30.5789737 28

Loc Oty

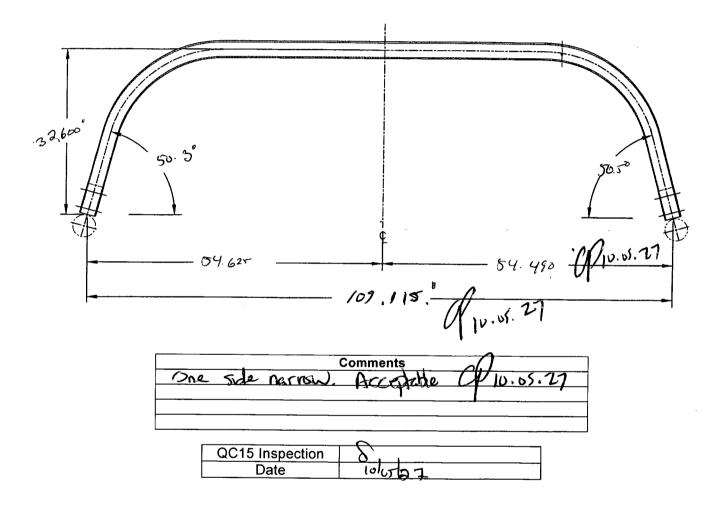
Loc Code

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	Re	solution:	Disposit	ion:		Q/	A: N/C CI	osed:		Date:	~~~~		
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DART AEROSPACE LTD	Work Order:	58932
Description: Crosstube High-High Fwd	Part Number:	D205-596-105
Inspection Dwg: D205-596-105 Rev: B		Page 1 of 1

Required Dimension	Min	Max
Height	32.4	32.6
1/2 Span	54.6	54.8
Angle	49	52
Total Span	109.2	109.6



Rev	Date	Change	Revised by	Approved
Α	07.02.06	New Issue	KJ/JM	1
В	08.04.21	Dwg Rev updated	KJ/JM	ha

SHOP COPY

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SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

H:Iso\forms\dimension sheets\approved DS\Blank-XtubeBend-DimSheet rev C.doc

W/O:			WO	RK ORDER CHANG	GES				<u> </u>	
DATE	STEP	PR	OCEDURE CHAI	IGE		Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
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Part No	•	PAR #:	Fault Category: NCR: Yes No D				lo DQ	4:	Date: _	
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DATE	STEP	Description of NC			ction B	<u> </u>	Verific	ation	Approval	Approval
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PARTS LIST:

Qty	Part Number	Description				
Х	X D205-596-105 CROSSTUBE ASSEMBLY, HI-HI FWD					
1	D6005-180	CROSSTUBE				
2	D2893-1	SUPPORT				
4	D3595-063-450	RUBBER CUSHION				
4	MS21920-25	CLAMP				
A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)				

GENERAL NOTES:

1) MATERIAL: MANUFACTURE FROM D6005-180 FINISHED LENGTH = 134.40 ± 0.02

2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART 005 4.2

3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED

4) UNITS: INCHES UNLESS OTHERWISE NOTED

5) BREAK SHARP EDGES: N/A

6) IDENTIFICATION: SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS

7) WEIGHT: 40 ibs

8) PART IS SYMMETRIC ABOUT CENTERLINE

- BEND PROGRESSIVELY WITH A MINIMUM OF 3 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 10) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 11) APPLY A 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2893-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 12) INSTALL MS21920-25 CLAMPS WITH D3595-063-450 RUBBER CUSHIONS TO SECURE D2893-1 SUPPORT ON THE TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE CROSSTUBE SUPPORT.

NOTE: IT IS ACCEPTABLE TO SUBSTITUTE MS21920-25 CLAMPS WITH LONGER (MS21920-26) OR SHORTER (MS21920-24) CLAMPS TO ACCOMODATE VARYING DIAMETERS. ENSURE THERE IS A MINIMUM OF 1.5 THREADS IN SAFETY ON THE NUTS.

13) TORQUE CLAMPS 80 TO 100 IN-LB

DEO ATTACHED



SHOP COPY

RETURN 10 ENGINEERING

UNCONTROLLED COPY

SUBJECT TO AMENDMENT

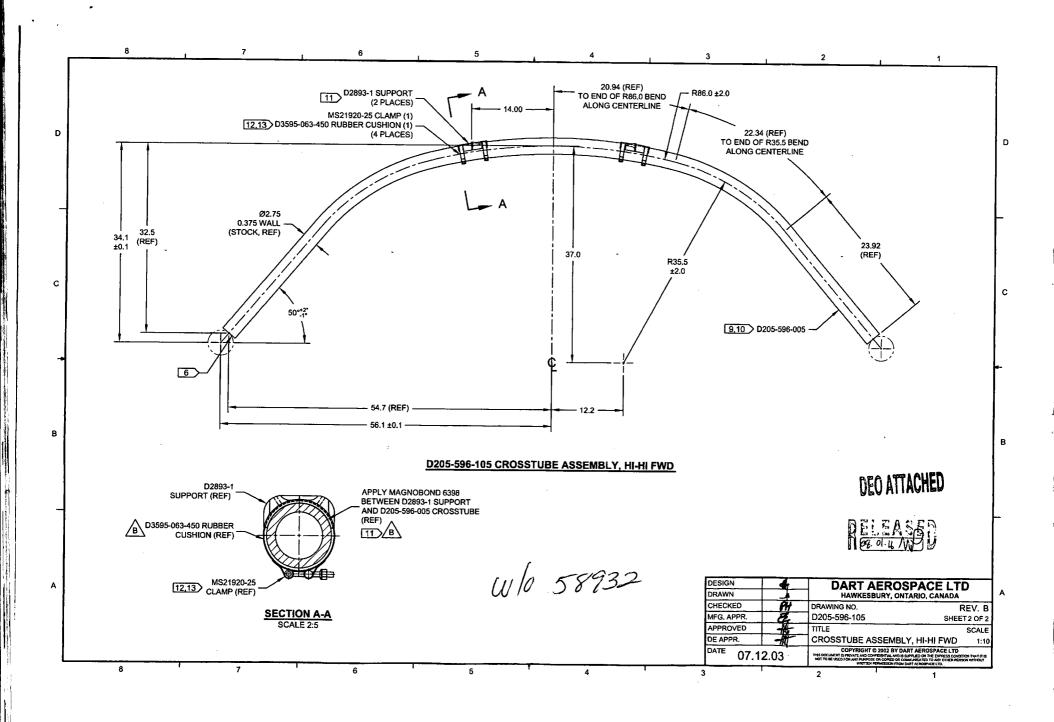
WITHOUT NOTICE

WORK ORDER NO. 58632

BS10-5-20

	В	851 AB	RASION	STRIP	NOBONDED; REMOVE D2856-600- P; UPDATED NOTES; ADDED ION; MS21920-25 WAS MS21920-24	МВ	07.12.03			
	Α	NEW IS	SUE	DS	02.11.20					
R	EV.				DESCRIPTION	BY	DATE			
DE	SIGN		4	t	DART AEROSP	ACE	LTD			
DR	DRAWNs				HAWKESBURY, ONTARIO, CANADA					
СН	ECKE	D	P	4	DRAWING NO.					
MF	G. AP	PR.	8	; 	D205-596-105	SHEET 1 OF 2				
API	PROV	/ED	-#		TITLE		SCALE			
DE	DE APPR.				CROSSTUBE ASSEMBLY, HI-HI FWD NTS					
DA.	TE	07.1	2.03		COPYRIGHT © 2002 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONTIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.					

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DRAWING	NO.	TITLE		REV. B	DART AEROSPACE LTD	D.E.O. NO.	SHEET NO.	SCALE
D205-59	6-105	CROSSTU	BE		ENGINEERING ORDER	D205-596-105-B-1	SHEET 1 OF 1	NTS
DRAWN	P		CHECKED	P t	MFG. APPR.	APPROVED A	DE APPR.	
DATE	09.05	.01	DATE	09.06.15	DATE 09/06/22 [DATE PROSPE	DATE 09.6.22	· · · · · · · · · · · · · · · · · · ·

CHANGE:

ADD THE FOLLOWING CROSSTUBE ASSEMBLY:

Part Number	Description
D205-596-105B	CROSSTUBE ASSEMBLY (214 HI-HI FWD)

THE D205-596-105B CROSSTUBE HAS THE SAME PARTS LIST AS THE D205-596-105 CROSSTUBE. HOWEVER, INSTALL THE SUPPORTS AS SHOWN IN FIGURE 1 OF THIS ENGINEERING ORDER. THE NEW KIT IS OTHERWISE ASSEMBLED PER THE D205-596-105 CROSSTUBE.



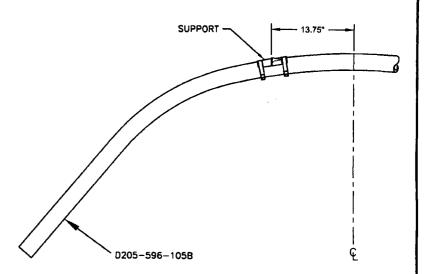


FIGURE 1 - SUPPORT INSTALLATION

W/0. 58932

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